



# **Understanding Regional Water Availability at Select Army Installations**

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# Outline

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- **Overview of water availability studies**
- **Discuss findings and status**
  - **Findings/recommendations from the pilot study at Fort Bragg and Fort Bliss**
  - **Application of pilot study methods**
    - ❖ **Ten CONUS installations**
    - ❖ **Three overseas installations**
- **Possible next steps**



# Overview

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## **Increasing Demand:**

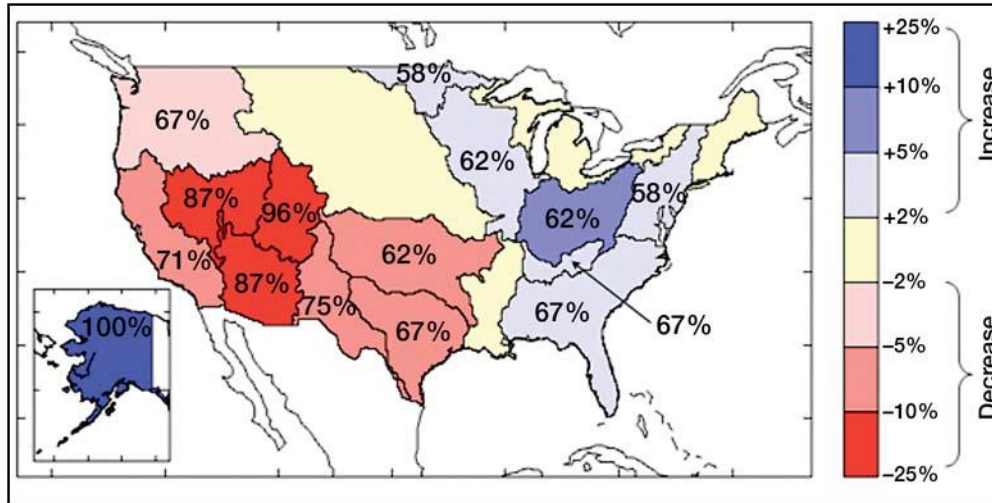
- Population growth**
- Overdevelopment**
- Aging infrastructure**
- Increased energy use**
- Agriculture and industrial use**

## **Decreasing Supply:**

- Over withdrawal**
- Complex water rights**
- Climate change**
- Cost and financing**
- Quality degradation**

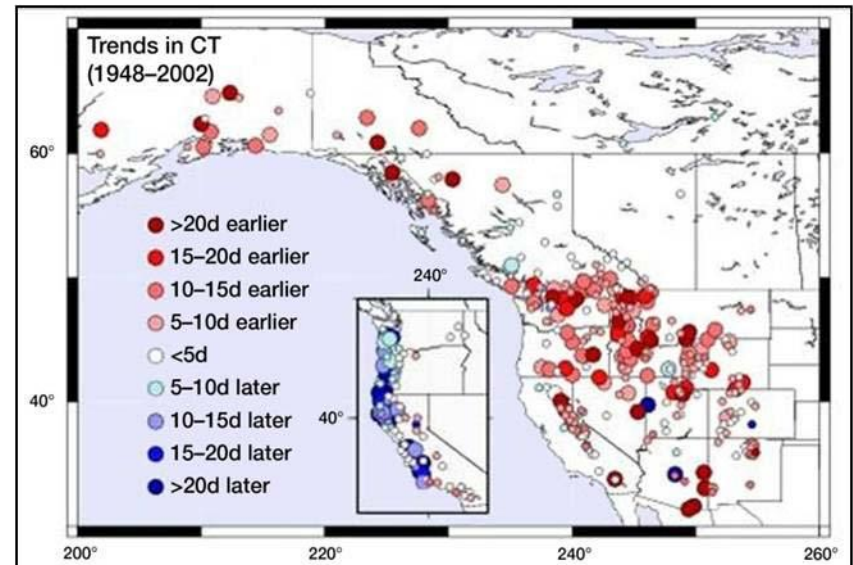


# Effects of Climate Change on Water



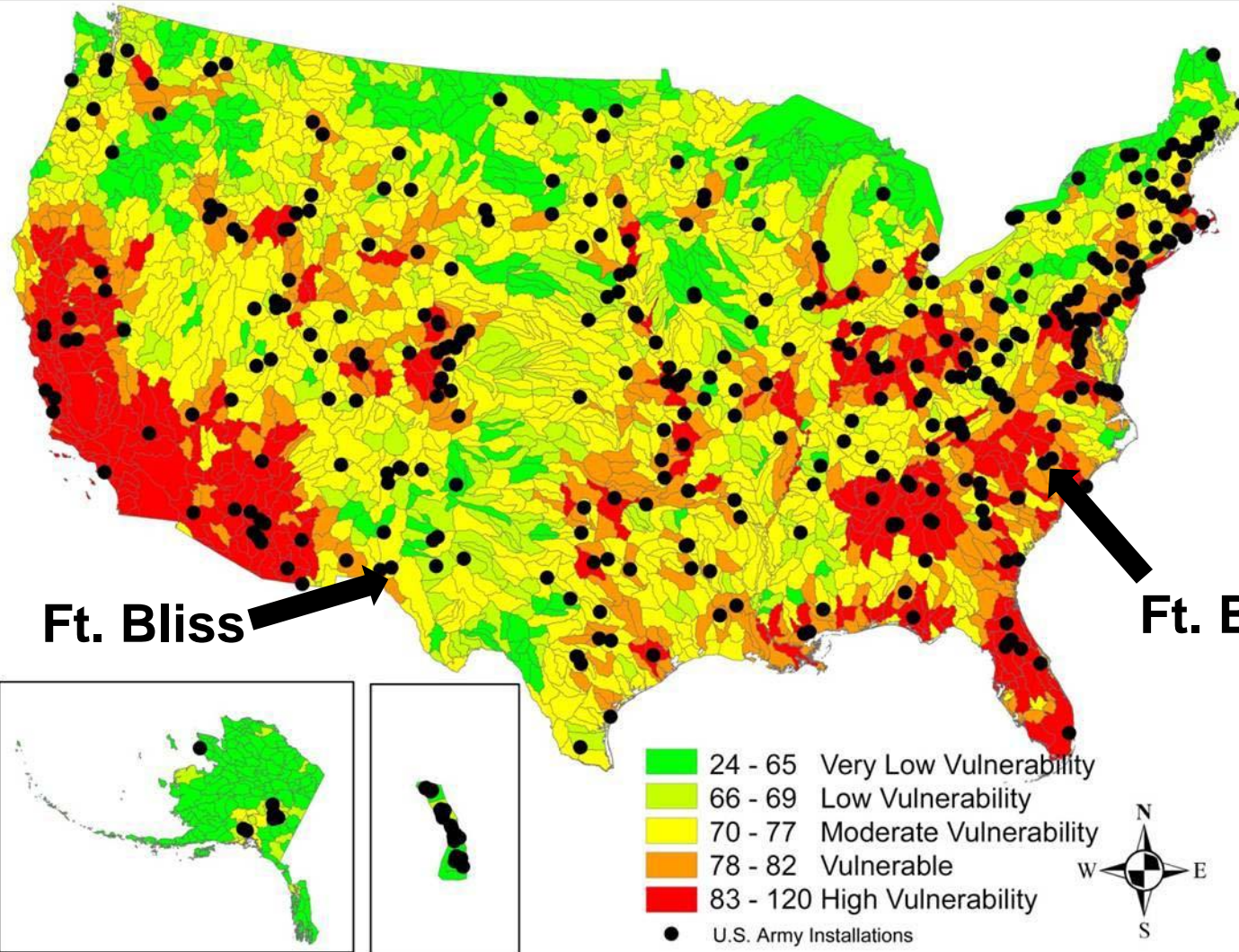
Probability of changes in runoff, 2041-2060

Historic changes in snowmelt runoff timing, 1948-2002





# Watershed “Health”



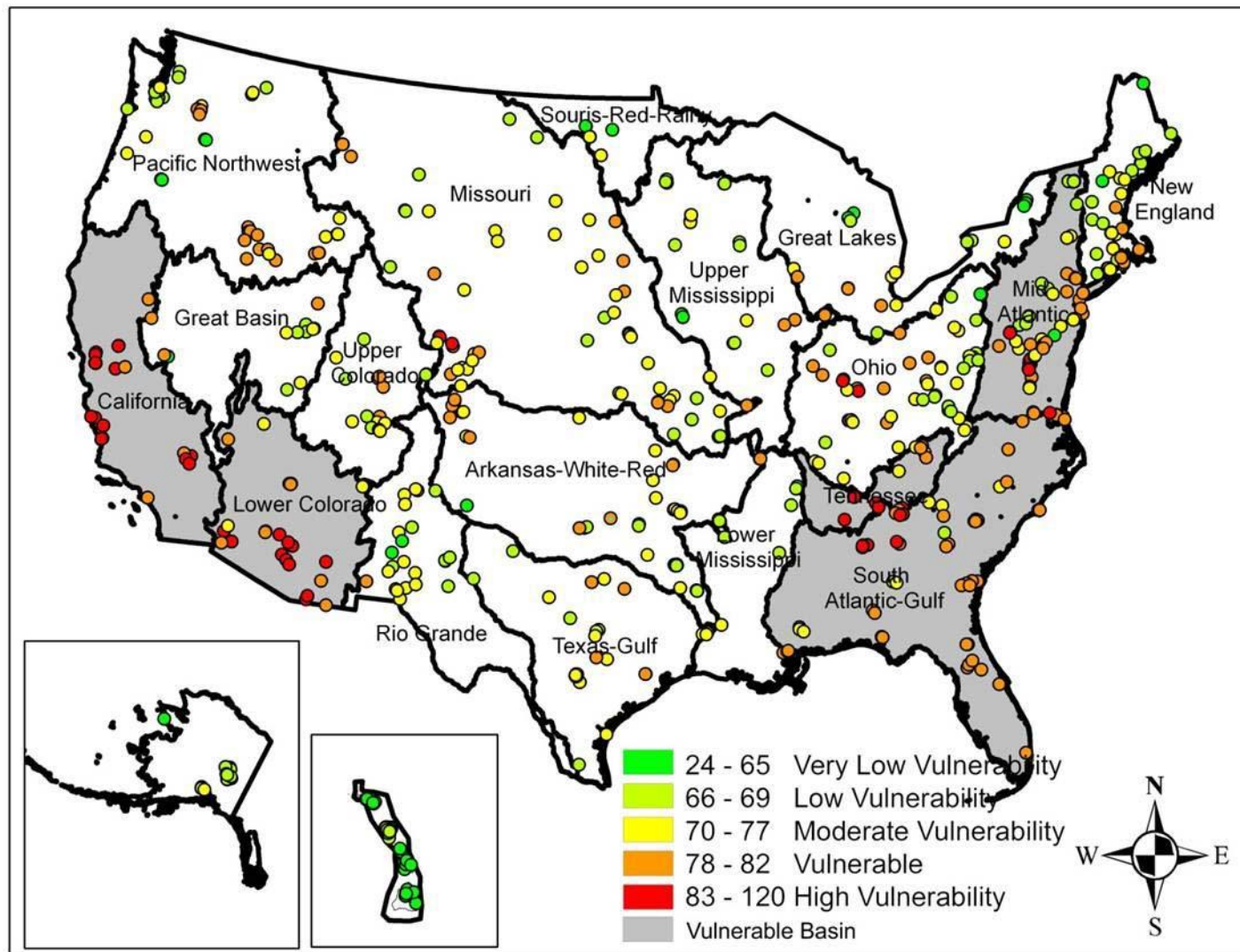
**RED**

**watersheds**  
are those  
having the  
greatest need  
for correction,  
protection, or  
restoration





# Priority Watersheds/Basins



**GRAY**  
**highlights**  
**target basins/**  
**installations**  
**for more**  
**detailed study**  
**and water**  
**resource**  
**protection**



# Pilot Study Objectives

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- **Evaluate the vulnerability of Army installations to potential water shortages over the next 30 years**
- **List installations by water vulnerability criteria, primary mission, and relative demand for water**
- **Develop methods and conduct detailed water valuations at select installations**
- **Identify policy options and technology advances to minimize potential affects of water shortages to Army missions**





# Pilot Study Findings

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## Fort Bliss

- The Fort Bliss region is anticipated to receive even less precipitation under global climate change
- Although scientific estimates of aquifer longevity differ, the aquifers are a declining resource and represent a limited non-renewable supply of water
- Existing utility wells have been capped due to salinity and the effect of pumping from new wells is unknown
- Additional demand for waters of the Rio Grande are anticipated, including upstream users in New Mexico
- Establish an aggressive water conservation program to reduce demand on existing wells and the back-up supply
- Institute a program of total water management to include a “purple pipeline” on post, as the utility has done in El Paso



# **Pilot Study Overall Recommendations**

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- **Emphasize water manager staffing**
- **Centralize data collection on-post and globally**
- **Include water efficiency measures in all projects**
- **Adopt a total water management program**
- **Emphasize metering/system upgrades**
- **Review installation water rates/contracts**
- **Engage local communities in regional planning for sustainable water**



# Possible Next Steps

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- **Document tools and findings in public works tech bulletins and on websites**
- **Prove-out concept for adoption by all CONUS installations**
- **Develop and apply assessment methods for all overseas regions**
- **Develop Water Collaboration Portal**
- **Conduct a water recycling feasibility assessment**